The Advisory Action

The Advisory Action indicates that the proposed amendments will not be entered for the alleged reason that they are not deemed to place the application in better form for appeal. In addition, the Advisory Action indicates that the Office has considered the arguments filed on June 27, 2005 but they are allegedly not persuasive.

The following grounds for rejection remain:

1. Claims 1-7 and 36-37 are rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Nishio et al. (USP 5,856,009);

2. Claims 1, 2, and 7 are rejected under 35 U.S.C. § 102(b), as allegedly anticipated by Ranby et al. (USP 4,396,863) or Okada et al. (USP 5,523,018); and

3. Claims 2-6 are rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ranby et al.

Discussion of Rejections

1. Anticipation Rejections

Nishio et al.: The Advisory Action alleges that Nishio et al. teaches a heat treatment of the coating from 400 °C to 500 °C. The Advisory Action argues that this temperature is within the heating temperature where the coating becomes uniform. The Advisory Action argues inherency and refers to the instant specification to justify the argument. Applicants respectfully disagree.

Inherent anticipation can arise only when "the prior art necessarily functions in accordance with, or includes, the claimed limitations. *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347 (Fed. Cir. 1999). Inherency may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. The disclosure must be such that the missing descriptive (e.g., a property of function relied upon by the Office) should naturally flow from the disclosure. *See, Continental Can Co., USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268-69, 20 USPQ 2d 1746, 1749 (Fed. Cir. 1991). The examiner must provide factual and technical grounds establishing that the inherent feature necessarily flows from the teachings of the prior art. Inherency must flow as a necessary conclusion from the prior art, not a possible one. See, *Ex*

parte Levy, 17 USP2d 1461, 1464 (Bd. Pat. App. & Int. 1990); *In re Oelrich*, 666 F.2d 578, 581, 21 USPQ2d 323, 326 (CCPA 1981).

Nishio et al. modifies the surface by plasma treatment and provides two types of coating films: heat resistive coating films which coat the phosphor particles and moisture proof coating films which coat the heat sensitive coating films (see abstract). Nishio et al. states that the second film is formed by chemical vapor deposition at a high temperature.

The Advisory Action states that Nishio et al. teaches a heat treatment (i.e., annealing) of the coating from 400 °C to 500 °C (col. 8, lines 30-33). Applicants respectfully submit that the Advisory Action is in error in asserting inherency. Nishio et al. modifies the surface of the phosphor by providing two coatings. The first coating, for example, is formed from oxygen plasma and tetraethoxysilane. Nishio et al. admits that the first coating alone is not effective to insure the successful operation of the phosphor. See, Fig. 7, where the deterioration of brightness is rapid when there is only the first coating film on the phosphor. Nishio et al. therefore provides a second coating, which is described as a sealing coating. The second coating film, for example, of silicon nitride, is formed, i.e., by reaction of the fourth gas (ammonia) and the third gas (dichlorosilane). Since the sealing coating is necessary for the proper functioning of the phosphor in Nishio et al., it follows that the first coating film is either covering the phosphor either incompletely or the film is too porous, or both. It is known to those skilled in the art that plasma treatment often produces incomplete or porous coatings. Thus, the phosphor particle may be coated with silicon dioxide only partially, and wherever the phosphor is exposed, the silicon nitride coating may fill in. In that case, the coating on the surface of the phosphor cannot be considered uniform because it would contain at least two different types of materials immediately in contact with the surface of the phosphor particle. In view of the foregoing, applicants respectfully submit that the Advisory Action has failed to meet its burden to justify inherency as to the uniformity of the coating. Accordingly, the subject matter of claims 1-7 as well as new claims 36-37 are not anticipated by Nishio et al.

Ranby et al.: Claims 1 and 7 are rejected as allegedly anticipated by Ranby et al. Ranby et al. fails to disclose the presently claimed invention. The Advisory Action states that Ranby et al. teaches a heat treatment at a temperature of from 200 °C to 800 °C. The Advisory Action contends that the coating is inherently uniform.

Applicants respectfully submit that the Advisory Action is in error. The Office failed to provide factual and technical grounds establishing that the inherent feature necessarily flows from the teachings of the prior art. Inherency must flow as a necessary conclusion from the prior art, not a possible one.

Considering the process practiced by Ranby et al., those of ordinary skill in the art would not expect that a continuous uniform coating would result. Ranby et al. employs a thin solution of a salt such as the nitrate salt of yttrium (20 ml of the solution containing the equivalent of 0.2 gram of Y_2O_3), and adds ammonia to precipitate the hydroxide of yttrium (see, e.g., col. 2, lines 3-11 and Example 1, lines 29-42). The hydroxide is dried at 120 °C to convert it to the oxide. The dried material, it is disclosed, may be optionally heat treated. In Example 2, the heat treatment is heating to 600 °C for 30 minutes in air, which is reported to improve maintenance of light output during operation. The improvement seen in Example 2 is, if any, only marginal. The lamp outputs are nearly identical. Error limits reflecting variation of the experimental results (i.e., sigma values) are not provided. Even if there is a marginal improvement, which applicants do not believe to be, the cited reference is silent as to the cause of such improvement. The Office has failed to address this. Further, it is known to those skilled in the art that precipitates (as formed in Ranby et al.) tend to be non-uniform or spotty; there is no evidence to justify that the precipitate forms a continuous uniform coating. In view of the foregoing, Ranby et al. fails to anticipate the presently claimed invention.

Okada et al.: Claims 1, 2, and 7 are rejected as allegedly anticipated by Okada et al. Okada et al. fails to disclose the presently claimed invention. The presently claimed invention requires that a continuous uniform coating of a crystalline rare earth oxide is disposed on the phosphor. There is nothing in Okada et al. that would justify such a coating is inherent. The Office points to the baking step at column 3, lines 30-33, where Okada et al. teaches that the phosphor is baked usually at a temperature of from 450 to 600 °C. However, Okada et al. admits that the composition of the resulting coating is not known completely. See col. 7, lines 35-42:

> At this time, the water-soluble rare earth compound, or a derivative thereof, i.e., hydroxide, can be converted into the corresponding oxidic compound. The converted oxidic compound of the rare earth element includes the rare earth oxide, *and also a composite oxide formed as a result of dehydration of the rare earth hydroxide during the baking step, of which structure can not be yet defined clearly (Emphasis added).*

The foregoing clearly shows Okada et al. indicates that baking produces a coating that contains rare earth oxide and another material of unknown structure. Thus, the coating cannot be uniform if it contains rare earth oxide and another material. Thus, a "uniform" coating does not necessarily flow from the disclosure of Okada et al. In view of the foregoing, Okada et al. fails to anticipate the claimed invention.

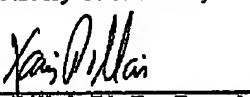
2. Obviousness Rejection

Claims 2-6 are rejected as allegedly unpatentable over Ranby et al. Claims 2-6 are dependent upon claim 1. As discussed, the subject matter of claim 1 is not disclosed by Ranby et al. Further, Ranby et al. fails to suggest to those of ordinary skill in the art a uniform coating comprising a crystalline rare earth oxide layer over the phosphor particles. In addition, the surface coated phosphor of the claimed invention has advantageous properties such as improved CL efficiency and stability. In view of the foregoing, the present claims are patentable over the cited references.

Conclusion

If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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